

METHOD AND SYSTEM FOR LEVERAGING SPARES IN A DATA STORAGE
SYSTEM INCLUDING A PLURALITY OF DISK DRIVES

ABSTRACT OF THE INVENTION

5 A method and apparatus for leveraging spare disks in a
data storage system. Specifically the present invention
describes a method for data recovery and redundancy in a data
storage system having a plurality of disk drives. The data
storage system is grouped into a plurality of arrays having
10 data redundancy. The plurality of arrays is arranged in an
optimum combination of arrays of mirrored pairs of disk
drives, arrays of three disk drives in a redundant array of
independent disks (RAID) configuration, and arrays of more
than three disk drives in a RAID configuration to maximize
15 performance while providing data redundancy. For every
failure of one of said plurality of arrays due to a failed
disk drive, a new array having data redundancy in a RAID
configuration is dynamically created in said plurality of
arrays. The new array is optimized for best performance and
20 contains information from the failed disk drive.